

MISSOURI CONSERVATIONIST

VOLUME 85, ISSUE 11, NOVEMBER 2024
SERVING NATURE & YOU





Indian Trail Conservation Area

Never Lose Touch Fall Challenge

Embrace the cooler weather by exploring this trio of nature activities.

Get Your Nature Boost

Join podcast host Jill Pritchard to explore everything in nature — from health benefits and wildlife viewing to unbelievable conservation stories. Download *Nature Boost* for free at mdc.mo.gov/natureboost.

Hang Out in Nature

Hammocking helps reduce stress, improve sleep, and boost focus. It's easy to set up almost anywhere. Start by choosing a spot where hammocking is allowed. Look for healthy trees at least 6 inches in diameter and use nylon or polyester straps. Hang your hammock at a 30-degree angle, 18–20 inches off the ground. Now sit back and enjoy nature, music, or a good book. Happy hammocking!

Take a Hike

Hit the trails to enjoy nature at your own pace. Here are some tips:

- Check the weather.
- Start early with an easy trail.
- Download a map.
- Bring plenty of water and snacks.

For trail suggestions, download the FREE MO Outdoors app.

Discover Nature and **Never Lose Touch**.

For ways to connect with nature, visit mdc.mo.gov/neverlosetouch.



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JEFFREY T. BRIGGLER

MISSOURI CONSERVATIONIST



ON THE COVER

White-tailed deer

📷 **NOPPADOL PAOTHONG**

300–800mm lens, f/7.1
1/400 sec, ISO 1600

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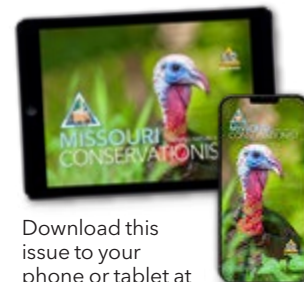
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Letters to the Editor

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GOT YOU COVERED

The cover of the September issue of the *Conservationist* is one of the most attractive I've seen. Job well done.

Dale Criss
via email



PERFECTLY PERSIMMON

My sincere compliments to Jan Wiese-Fales on A 'Verie Good Fruit' [September, Page 17]. What an awesome and 'verie' timely article. This time of year, my walks in the forest are a lot more enjoyable, not only because of the fine weather, but also because of persimmons on the forest floor.

The softer and soggy the fallen fruit, the tastier and deliciously sweeter they are. As John Smith once said, they are "as delicious as an 'apricock,'" but I say they are *more* delicious.

And who needs the National Oceanic and Atmospheric Administration? I can tell what the coming winter will be like just by the shape of the sleeping embryo in the persimmon seed's cotyledon.

A 'Verie Good Fruit,' indeed.

Alfredo I. Custodio Florissant

APPRECIATING SPIDERS

My family and I love your magazine. We all read it cover to cover, enjoying the beautiful photos, the different articles, and many topics about our wonderful state.

Your September 2024 issue talked about spiders [Nature Lab, Page 4]. I never liked spiders, but after reading your article, we all found it very interesting. We had no idea how many different spiders there were in the world, in North America, and in Missouri.

My family was really fascinated by all the different varieties of spiders and that they are still finding new species.

Dandridge Family via email



CONSERVATION FOR THE CITY, TOO

I just completed the magazine survey [September, inside front cover], but hoped there would be an opportunity to comment on why I like the *Missouri Conservationist* so much. I am a "city person," growing up in St. Louis County and living in towns all my life. But I love this magazine! The information contained in each issue about nature and wildlife is fascinating to me. I am not a hunter or fisher, but there are always topics that interest me.

I particularly liked Sara Parker Pauley's commentary and hope the new director continues.

Thanks for publishing a really great magazine. I can attest it appeals to — and educates — a broad audience.

Terry Weston Columbia

Director Jason Sumners is carrying on former Director Sara Parker Pauley's Up Front column. You can find his words of wisdom and thoughts on future conservation challenges and opportunities in each issue on Page 3. —THE EDITORS

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Have a Question for a Commissioner?

Send a note using our online contact form at mdc.mo.gov/commissioners.

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The Missouri Department of Conservation protects and manages the fish, forest, and wildlife of the state. We facilitate and provide opportunity for all citizens to use, enjoy, and learn about these resources.



Want to see your photos in the *Missouri Conservationist*?

Share your photos on Flickr at
[flickr.com/groups/mdcreaderphotos-2024](https://www.flickr.com/groups/mdcreaderphotos-2024)
or email Readerphoto@mdc.mo.gov.



1

1 | Lake watchers
by **William Heimsoth**,
via website
submission

2 | Tufted
titmouse by
Pamela Rethy,
via Flickr

3 | Coyote by
Steven Haddix,
via Flickr



2



3



Want another chance to see your photos in the magazine?

➔ In the December issue, we plan to feature even more great reader photos. Use the submission methods above to send us your best year-round pictures of native Missouri wildlife, flora, natural scenery, and friends and family engaged in outdoor activities. Please include where the photo was taken and what it depicts.



Up Front

✳ In early September, thanks to a generous offer from a private landowner, I had the opportunity to take my son on his first dove hunt. We were successful in harvesting a few doves, but for me, this would have been a successful hunt regardless of the outcome. By simply sharing time with him, sitting on a bucket on the edge of a sunflower field talking about nature, we made lasting memories. One remarkable thing happened after the hunt. My son asked, "Dad, can we share the doves with my friends?" It was certainly a proud dad moment.

Over the next few weeks, nearly 475,000 individuals will go afield in pursuit of white-tailed deer. Many of us will share our harvest with neighbors, friends, family, and those in our communities who are less fortunate. We estimate nearly 14 million pounds of high-quality venison is harvested each fall, accounting for more than 36 million meals. Add that venison to the millions of pounds of fish and other game harvested each year and you see the critical role fish and wildlife play in providing protein for many Missourians.

It's important that we continue the challenging work of responsibly managing the state's fish and wildlife and protecting the habitats on which they depend. By doing so, we are ensuring a high-quality food source that benefits so many people. I plan to do my part this fall, enjoying the benefits of an abundant deer herd that allows us to put venison in the freezer and sharing the bounty of success with others.

JASON SUMNERS, DIRECTOR
JASON.SUMNERS@MDC.MO.GOV

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HABITAT MANAGEMENT

Greentree Reservoir Research

Study seeks to improve flooded timber management for winter waterfowl habitat

by Dianne Van Dien

✳ Every winter, the floodplains of the lower Mississippi Valley provide flooded forest habitat for waterfowl, migratory birds, and other wildlife. Historically, this habitat flooded naturally. But as more acres were progressively drained for agriculture, natural resource managers began creating what are known as greentree reservoirs (GTRs), flooding portions of the bottomland forest each fall via levees and water control structures. Research shows that GTR flooding benefits both the desired trees and wildlife. Over time, however, that begins to change.

At issue are pin oaks and other red oak species whose acorns provide winter food for wood ducks and mallards in these areas. Managers must create conditions so these sun-loving oaks can regenerate under the additional effects of annual shallow flooding. Dormant trees can generally withstand



The annually flooded forests of greentree reservoirs provide winter habitat for migratory birds and waterfowl as well as recreational opportunities for hunters, birdwatchers, and others.

flooding, so GTRs are flooded after trees lose their leaves in autumn and drained in spring before leaves start growing. At first, this system seems to support the oaks, but after about 10 years, the oak trees produce fewer acorns; fewer oak seedlings survive; waterfowl use declines; and ash, elm, and maple species begin to dominate the forests.

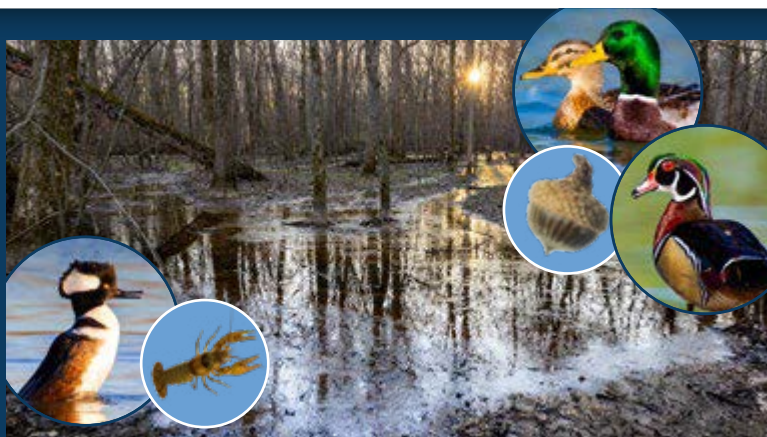
“We’ve been flooding and draining at very specific times of the year, and we’re starting to understand that we need more information about dormancy,” explains MDC Research Forester Brad Graham. “We need to understand what’s going on below ground.”

In 2019, MDC and partners began a three-part study to find this out. They are investigating: 1) air and soil temperatures and soil moisture in GTRs throughout the year, 2) how these temperatures and floodings affect oak seedlings and root growth, and 3) how the flooding regime has affected the mature oaks over time.

The goal is to learn which environmental conditions signal the optimal time(s) for flooding. As results come in, Graham says, we’re “developing the necessary information to fine-tune this system, to make sure we are doing our best to maintain those target oak species in the overstory.”

At a Glance

Greentree reservoirs are flooded each fall to provide habitat for migratory birds, waterfowl, and other animals. This practice began in Arkansas in the 1930s and spread to surrounding states as natural flooding waned due to agriculture and other land use changes. MDC and partners are researching how to fine-tune the flooding regime so the desired oak species will continue to regenerate and thrive in these areas.



GTRs support mallards and wood ducks with shelter among the trees and fallen acorns as a major food source. Hooded mergansers feed on crayfish in the shallow water.

Partners:
Arkansas Game and Fish Commission, U.S. Forest Service, U.S. Fish and Wildlife Service, University of Missouri, University of Arkansas

In Brief

News and updates from MDC



Hunters are getting started on their rabbit hunt. The MRAP program provides people with more opportunities for a variety of outdoor recreation.

MISSOURI OUTDOOR RECREATIONAL ACCESS PROGRAM

PROGRAM OFFERS ADDITIONAL OPPORTUNITIES FOR OUTDOOR RECREATION, INCLUDING SMALL GAME AND QUAIL HUNTING

➔ Hunters looking for new locations to pursue small game and quail should consider properties that are part of the Missouri Outdoor Recreational Access Program (MRAP). The program is a partnership between MDC and private landowners who agree to give wildlife watchers, anglers, and hunters additional opportunities for outdoor recreation. MRAP properties are well marked with signs.

Under MRAP, private landowners receive incentive payments from MDC in return for allowing walk-in access to property designated for outdoor recreation uses. The recreation allowed on each property varies and is determined by landowners.

To find MRAP properties that host your intended activity, search online at mdc.mo.gov/mrap. For small game and quail hunters, there are 28 properties that allow small game hunting, totaling approximately 15,000 acres. Fourteen of these sites are designated for small game and turkey hunting only.

In northern Missouri, you can visit one of our newer small game properties, Slater Branch. This property is 80 acres of grassland, forest, and riparian areas. While in southern Missouri you can visit a much larger property, 354 acres, that is a mix of grassland and forest.

MRAP properties are not the same as public lands. While MRAP tracts must contain minimum amounts of wildlife habitat, many of the properties also include areas with limited wildlife value, such as pastures and hayfields. In addition, visitors shouldn't expect to see many of the amenities that are common on MDC areas, such as mowed walking paths, wildlife food plots, and gravel parking lots. Unless designated otherwise, parking is often along public roadsides.

For more information on MRAP, property open for public use, and the specific types of uses allowed on individual tracts, visit short.mdc.mo.gov/Zcs.

CWD INFO TO KNOW FOR DEER HUNTERS

MDC reminds deer hunters of voluntary and mandatory sampling to test their harvested deer for chronic wasting disease (CWD).

CWD is a deadly, infectious disease in deer and other members of the deer family (cervids) that threatens Missouri's deer population, hunting culture, and economy. There is no vaccine or cure. CWD has been found in Missouri, and MDC continues efforts to limit the spread by finding new cases as early as possible and managing the disease to slow its spread.

During the opening weekend of the November portion of firearms deer season, Nov. 16–17, hunters who harvest a deer in designated CWD Management Zone counties must take the deer (or its head) on the day of harvest to a mandatory CWD sampling station. The CWD Management Zone consists of counties where CWD has been found and those within 10 miles of where CWD has been found.

MDC also offers free voluntary CWD sampling and testing of harvested deer during the entire deer season at select locations throughout the state, including some MDC offices and participating taxidermists and meat processors.

For added convenience, MDC has self-service freezer drop-off locations within the CWD Management Zone for hunters to deposit harvested deer heads to have tested for CWD. Instructions, packing supplies, and information tags are available at the sites.

Hunters can get their free CWD test results online within about four weeks or less from the time of taking tissue samples from the deer.



Get more information on CWD requirements online at mdc.mo.gov/cwd, or from the *2024 Fall Deer & Turkey Hunting Regulations and Information* booklet, available online at short.mdc.mo.gov/ZVo and wherever permits are sold.

Ask MDC

Got a Question for Ask MDC?

Send it to AskMDC@mdc.mo.gov
or call 573-522-4115, ext. 3848.

Q: Is this a hermit thrush? The photo was taken in Oregon County.

➔ Yes, this is a hermit thrush.

Missouri is home to numerous small brown birds, which can be challenging to identify. But with attention to detail and practice, even novice birdwatchers can begin to identify Missouri's native songbirds.

Hermit thrushes are chunky, like a robin, but slightly smaller. They are a warm brown on their heads and back with distinctively reddish tails. Their underparts are pale with spots on the throat and smudges on the breast. They have a pale, thin eye-ring; a bolder eye-ring with buffy lores means you may be seeing a Swainson's thrush.

These birds head north in summer months, but they migrate here in October and can be found through the winter until spring.

Since they eat mainly insects — beetles, caterpillars, bees, ants, wasps, and flies — they don't visit bird feeders. They also occasionally eat small amphibians and reptiles. In the winter, they change their diet to eat more fruit, including wild berries.

They like to forage on the forest floor, staring at the soil, picking up leaf litter with their bills, and shaking bits of grass to stir up insects.



Hermit thrush

Q: Are Missouri winters cold enough for bears to hibernate?

➔ Yes. In Missouri, black bears usually retire to their winter dens between mid-November and mid-December to hibernate. Females with cubs tend to den the earliest, females with yearlings next, then adult males, followed by subadult males, which den last.

Bodily functions are greatly slowed; they do not eat, drink, or defecate. Their metabolic rate drops by as much as 50 percent, body temperature dips 1 to 7 degrees below normal, pulse rate lowers from 140 to 66 beats per minute, and breathing slows to a rate of 2 to 5 times a minute. They are in alternate periods of deep to light sleep and some bears might leave their dens for short periods during warm spells.

HERMIT THRUSH: MARIA MOORE; GOLDEN REISH: LINDA SCHLAX

This period of winter inactivity extends until April. They lose weight during hibernation and will continue to lose weight for a few weeks thereafter. They'll eat green vegetation for nourishment and to activate their dormant digestive systems.

Q: This fungus was found inside a well house in Stone County. It appears it "exploded" with a large amount of brown powdery substance landing on everything stored there. Can you identify it?

➔ Many mushroom experts formerly called this species *Ganoderma lucidum*. But it is more correctly *Ganoderma curtisii* as *Ganoderma lucidum* does not occur naturally in North America.

All the *Ganoderma* species produce massive amounts of brown spores.

Sometimes called "golden reishi," this species is widespread east of the Rocky Mountains. It has a gorgeous lacquered cap and pale brown flesh. It can grow alone or



Golden reishi

in groups on decaying logs and stumps. It also grows from the wounds of injured, living trees.

Ganoderma species of mushrooms have been used in traditional medicine in East Asian cultures. However, mushrooms can be challenging to identify. We caution people to be careful before ingesting any mushroom they find in the wild; some species can be quite poisonous.

For more information, visit short.mdc.mo.gov/4Do.



Jobe Edwards

JACKSON COUNTY
CONSERVATION AGENT

offers this month's

AGENT ADVICE

November is a month long awaited by most hunters because it marks the holy grail of hunting seasons — firearms deer season. In all the excitement to get to deer camp or your favorite stand, remember some basics to make this season as safe and smooth as possible. Wear hunter orange whether you're hunting on public or private lands. Have a clear sight of your target before pulling the trigger. Purchase permits in advance. Notch your permit immediately after harvest and telecheck your harvest by 10 p.m. These can be done by phone or on the MO Hunting app. For more information, consult the *2024 Fall Deer & Turkey Hunting Regulations and Information* booklet at short.mdc.mo.gov/ZVo.

What IS it?

Can you guess this month's natural wonder?

The answer is on
Page 9.



WE ARE CONSERVATION

Spotlight on
people and partners

by Emily Franklin

Marian Brickner

➔ Marian Brickner, a Missouri resident and world-renowned nature photographer, has dedicated her life to making people smile. Through her Nikon AF-I 600mm f/4 Prime lens, she captures the individual within each animal she photographs. Brickner emphasizes that nature photography is more than looking at a pretty picture. It connects us with nature, reduces stress, and inspires creativity.

Capturing Confidence

Brickner says her photos resonate with children because they can relate to animals of different shapes and sizes overcoming obstacles. "You can't control in what form you are born, but you can do it!"

More from Marian

Brickner hopes to inspire generations to stay active. She spends four to six hours per day on her photography with a goal of publishing one book every three months. Brickner's work can be found in many of her 78 books, available online.

Marian Brickner loves spending time at her favorite spot, Forest Park in St. Louis, patiently waiting for the perfect moment — like this one with the barn swallows.



What's **your** conservation superpower?

by Noppadol Paothong

SHARE THE HARVEST

MDC encourages deer hunters to share their harvests by donating extra venison to the Share the Harvest program. The donated deer meat goes to local food banks and food pantries to help feed hungry Missourians. To get Share the Harvest venison, contact local food banks or food pantries.

To donate, take harvested deer to an approved meat processor and let the processor know how much venison to donate. Meat processing fees are covered entirely or in part by numerous local sponsors, along with statewide sponsors.

The program, administered by the Conservation Federation of Missouri and MDC, has provided nearly 5 million pounds of lean, healthy venison to food banks and pantries since 1992.

The National Institutes of Health state that children need protein in their diets for proper growth and development, and adults need it to maintain good health. Unfortunately, many Missourians cannot afford or cannot get to good sources of protein. Through Share the Harvest, Missouri hunters can help provide those in need with high-quality protein in the form of naturally lean, locally harvested deer meat.

Deer harvested from CWD Management Zone counties may only be donated to Share the Harvest if they are tested for CWD. The CWD Management Zone consists of counties where CWD has been found and those within 10 miles of where CWD has been found. Hunters can take their deer to a processor participating in the Share the Harvest CWD Testing Program or have their deer sampled at another location prior to donation.

Deer harvested outside of the CWD Management Zone do not need to be tested for donation to Share the Harvest and may be taken to any Share the Harvest processor.

For more information on Share the Harvest, visit us online at mdc.mo.gov/share.



HONOR MISSOURI CONSERVATIONISTS

MDC is seeking nominations for the Master Conservationist Award and Missouri Conservation Hall of Fame. These recognitions honor Missourians who make or have made outstanding contributions to conservation in Missouri. The deadline for nominations is Dec. 31.

The Master Conservationist Award was created in 1941 to honor living or deceased citizen conservationists, former MDC commissioners and staff, and employees of other conservation-related agencies, universities, or organizations who made substantial and lasting contributions to Missouri's fisheries, forestry, or wildlife resources, including conservation law enforcement and conservation education-related activities in the state. The award has been given to 69 individuals since its creation.

Get more information, including a list of award winners, criteria, and nomination form, at short.mdc.mo.gov/4Re.

Established in 1988, the Conservation Hall of Fame honors living or deceased citizen conservationists, former employees of MDC, and other conservation-related government agencies, universities, or organizations (including conservation law enforcement and conservation education-related activities) who changed the landscape of conservation in Missouri in the fields of fisheries, forestry, or wildlife resource management.

A total of 47 people have been inducted into the Missouri Conservation Hall of Fame, which is in Runge Conservation Nature Center in Jefferson City. Inclusion in the hall is Missouri's top conservation honor.

Get more information, including a list of award winners, criteria, and nomination form, at short.mdc.mo.gov/4Rh.

Submit nominations online using the provided links by Dec. 31. Contact MDC Executive Assistant Julie Love with questions at Julie.Love@mdc.mo.gov.

WHAT IS IT? BALD CYPRESS

Bald cypress trees are large, growing up to 130 feet tall, with swollen, pyramid-shaped bases. Found in swamps, sloughs, and wet-bottomed forests, these trees often have cone-shaped "knees" emerging from the roots. The bark is thick with long, narrow grooves and flat, long ridges that peel off in fibrous, narrow strips. The oldest bald cypress trees in Missouri are at Allred Lake Natural Area, where they range from 500 to 1,000 years old.





Northern flicker



Downy woodpecker



Woodpeckers can drum trees up to 20 times per second without brain damage, and scientists are still learning how.



Missouri's Woodpeckers

MORE THAN JUST THE
HEADBANGERS OF THE BIRD WORLD

by Emily Franklin

In the quiet stillness of the forest, a sudden burst of sound shatters the tranquility. It is the rhythmic drumming of a woodpecker, nature's master carpenter. Its unmistakable sound and impressive adaptations makes the woodpecker a captivating subject of study for bird enthusiasts and scientists alike.

According to the International Ornithological Committee, 240 species of woodpeckers have been identified in wooded areas around the world, except in the Oceania Region of the globe, which includes Australia and New Guinea. Depending on the season, there are seven species of woodpeckers in Missouri: downy, hairy, northern flicker, pileated, red-bellied, red-headed, and yellow-bellied sapsuckers.

The ability to distinguish one species from another is most easily done by identifying their plumage colors and patterns, relative to their body size. Coloring typically consists of brown, black, grey, and white, with a splash of their signature red, most frequently found on their nape, throats, or crown. Patterns vary from barring and spotting to stripes and bands.

When in flight, woodpeckers, such as the pileated, red-headed, and northern flicker, reveal patches on the wings, tail, or rump. For example, the yellow-shafted type of northern flicker displays bright-yellow coloring on its wings and tail feathers. Downy and hairy woodpeckers are often mistaken for each other because of their similar markings. However, the downies are the smallest species of woodpeckers in North America. Hairy woodpeckers are larger, with a longer, stouter bill.

Telling male and female woodpeckers apart can be difficult unless you know where to look. The male pileated, hairy, and downy woodpeckers have more prominent red markings than the females. Pileated males have red mustaches while northern flicker males found in Missouri have black mustachelike streaks. Red-bellied males have a wide red band that stretches over their crown to their nape, while females only have the red marking across their nape. Yellow-bellied sapsucker females have white throats, while the males' throats have red. As for red-headed woodpeckers, it is nearly impossible to distinguish between the sexes without close-up investigation.

Red-headed woodpecker

ALL WOODPECKERS: NOPPADOL PAOTHONG

Cool Tools

Woodpeckers are unique in that they are often found scaling tall trees with the help of their zygodactyl feet. This means they have two toes pointing forward and two back, which helps them maintain a firm grip on vertical surfaces. They use their stiff tail feathers to help brace themselves as they move up and down trees. Woodpeckers have a built-in stud finder to hear when an insect is beneath bark or in a hollow part of a tree. They do this by drumming on its surface, much like when you tap a hammer on a wall to find a hidden stud.

Once an insect is located, woodpeckers use a whole system of unique tools to finish the job. Their chisel-shaped beaks, powered by their strong neck muscles, drive beneath the tree bark. Their thick but spongy skull acts as a shock-absorber, spreading and absorbing the impact of the harsh blows to protect the brain. Next, to retrieve insects from a tree, the woodpecker uses the bristle tip of its long tongue. Northern flickers are documented as having the longest tongues, which can extend 2 inches past the tip of the bill.

Comical Communicators

Woodpeckers communicate by drumming, vocal calls, and aggressive displays. Male woodpeckers proclaim their territories by drumming a loud rapid sequence on a dead branch or hollow tree. You may have even heard them drumming on the side of your house, rain gutter, or another metal surface. This behavior can be deterred with the use of balloon scare-eyes or shiny, colorful streamers, known as mylar tape, placed slightly above an area a woodpecker has damaged.

When males and females pair up during mating season, they may drum back and forth, duet-style. Some species tap on certain suitable nest sites as part of the courtship ritual. Aggressive displays often used by woodpeckers to defend their territories or feeding sites usually involve rapid head movements such as bowing, bobbing, turning side to side or back and forth, or pointing their bill up. To appear larger, they ruffle their head feathers or partially spread their tail feathers and wings.

Many species of woodpeckers will show off for prospective mates by fluttering or floating while in flight. Their initial, aggressive displays may appear hostile, but in time, the sexes become more tolerant of each other.

Woodpeckers drill holes in trees where they nest. These nest cavities become important to other bird species, like the eastern screech-owl, who depend on these old cavities for their nesting sites.



Red-bellied woodpecker



Red-headed woodpecker





Pileated woodpeckers



Eastern screech-owl



Hairy woodpecker

RED-BELLIED: © PROEDDING77 | DREAMSTIME.COM; RED-HEADED: NOPPADOL PACHONG; HAIRY: JIM RATHER; PILEATED: © STEVEYLAND | DREAMSTIME.COM; SCREECH OWL: © JILLANG | DREAMSTIME.COM

Home Sweet Habitat

Woodpecker diets primarily consist of insects, nuts, fruits, and sap. Many of these insects are potential timber pests, which left unchecked, can be severely problematic. Species like the northern flicker may feed on the ground, while others, like the red-headed woodpecker, will catch insects in flight. Most woodpeckers will forage for wood-boring insects in trunks and limbs, and while excavating nest cavities.

Every woodpecker species found in Missouri nests and roosts in holes they usually create themselves. Unlike a typical bird nest, a woodpecker's nest cavity provides enough shelter to raise their young, so there is no need to carry in many twigs and common nesting materials. Instead, they will often line it with a few wood chips for the eggs to rest on.

The average number of eggs in each clutch is between four and six. Red-headed woodpeckers, however, can lay three to 10 eggs per brood, one to two times per year. Most species only lay one brood per year, unlike the red-bellied woodpecker, which can lay one to three broods per year. Incubation of the eggs can take as little as 10–12 days for most species, and as many as 14–18 days for others. The male and female take turns incubating the eggs. The female takes most of the day shift while the male takes the night shift, and both bring food back to the young in the nest.

Both the male and female guard the nest from dangers such as snakes and other predators that will try to eat the eggs and chicks. Starlings and other birds often try to take over or cohabitate the cavity for their own brood. An average of 24 days after hatching, fledging begins to take place. Fledging is when a bird's wings have developed enough to attempt to fly.

Essential to the Ecosystem

Woodpeckers are fascinating and unique birds that have adapted to their environment in remarkable ways. From their specialized anatomy to their distinctive drumming behavior, woodpeckers play an important role in Missouri's diverse ecosystems.

Species such as bluebirds, eastern screech-owls, American kestrels, and squirrels depend on woodpeckers' old nest cavities for their own nests. Although yellow-bellied sapsucker holes may sometimes seem problematic, hummingbirds may find their first meals of the season from the sap pooled within them. Woodpeckers greatly increase the rate of forest decomposition while also decreasing populations of insects that can significantly damage the health of an entire forest if left unchecked.



Downy woodpecker

Woodpeckers' zygodactyl feet help them grip the sides of trees as well as suet feeders.

Unfortunately, woodpecker populations are declining.

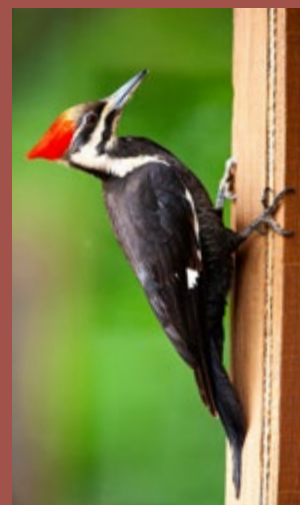
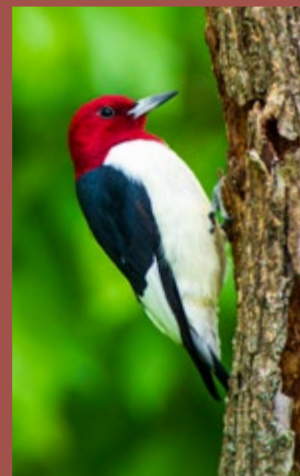
"Red-headed woodpeckers and northern flickers are declining at a rate of about 2 percent each year," said State Ornithologist Kristen Heath-Acre. "Fortunately, there are small ways landowners can assist in combating woodpecker habitat decline."

Here are some simple steps you can take to help stop bird decline in your area:

- If it is safe to do so, keep dead or dying trees, also known as snags. They provide nesting spots and attract insects for food.
- Put stickers or lines on windows to deter the birds from flying into them by mistake.
- Plant native trees and shrubs to complement the use of bird feeders to attract more woodpeckers to your backyard.
- Use suet feeders with big, hearty nuts and berries. Black oil sunflower seeds are a great option, too.
- Be sure to clean the feeders regularly to prevent the spread of disease.

By learning more about these remarkable birds, we can deepen our appreciation for the intricacies of the natural world and the diverse array of species that call it home. So, the next time you hear the rhythmic tapping of a pileated woodpecker in the forest or watch a small flock of downy woodpeckers that frequent your backyard feeders, take a moment to marvel at the incredible abilities and resilience of these fascinating creatures. ▲

Emily Franklin is an administrative assistant for MDC's Communication and Education branches. In her free time, she enjoys writing children's books, flipping furniture, and spending time outdoors with family.



HAIRY, YELLOW-BELLIED WOODPECKERS: JIM RATHER; OTHERS: NOPPADOL PAOTHONG

Woodpeckers of Missouri

Red-Headed Woodpecker

Melanerpes erythrocephalus

Status: Common summer resident

Size: 9¼ inches long

Food: Acorns, fruit, plant and animal material

Habitat: Deciduous woodlands and open areas with scattered trees, nesting in cavities excavated in barkless snags or dead stubs on live trees; also uses natural cavities

Life cycle: Three to 10 eggs for 12 to 14 days; young fledge 24 to 31 days

Call and drum: Call is a loud *kweer* or *kwee-arr*, given in short series; drums softly in short bursts

Pileated Woodpecker

Dryocopus pileatus

Status: Uncommon permanent resident

Size: 16½ inches long, largest of resident woodpeckers

Food: Insects, some fruit, acorns, nuts, and sap

Habitat: Deciduous and coniferous forests, woodlands, parks, and suburbs, nesting in cavities excavated in snags (often barkless)

Life cycle: Four eggs incubated for 15 to 18 days; young fledge in 26 to 28 days

Call and drum: Call is slow, irregular or fast, from *a-wik*, *a-wik* to *wuk-wuk-wuk*; drum is loud and steady

Downy Woodpecker

Dryobates pubescens

Status: Common permanent resident

Size: 6¾ inches long, smallest of resident woodpeckers

Food: Insects, occasionally fruit, seeds, and sap

Habitat: Woodlands, from extensive mature forests to small urban woodlots, nesting in cavities excavated in snags or live trees

Life cycle: Four to five eggs incubate for 12 days; young fledge in 20 to 25 days

Call and drum: Call is a frequent high pitched *pik* and *ki-ki-ki-ki* rattling series; drum is frequent in 1- to 1.5-second bursts



Hairy Woodpecker

Dryobates villosus

Status: Uncommon permanent resident

Size: 9¼ inches long

Food: Insects, occasionally nuts (in winter), and sap

Habitat: Mature forests and well-wooded towns and parks, nesting in cavities excavated in snags

Life cycle: Three to six eggs incubated for 11 to 12 days; young fledge in 28 to 30 days

Call and drum: Call is a sharp, loud *peek* or *keek-ik-ik-ik* rattling series; drum is frequent but varies, indistinguishable from downies, except by volume



Yellow-Bellied Sapsucker

Sphyrapicus varius

Status: Uncommon migrant

Size: 8½ inches long

Food: Tree sap and cambium, fruit, berries, insects, and nuts

Habitat: Mixed deciduous and coniferous forests, nesting in cavities excavated in live birch, poplar and aspen; often near water

Life cycle: Four to six eggs incubate for 10 to 13 days; young fledge in 25 to 30 days

Call and drum: Call is a *chur* or *mews* or *weep-weep*; drums is irregular *tap-tap*, *tap-tap-tap*, *tap*, *tap-tap-tap* drumming pattern, like Morse code



Red-Bellied Woodpecker

Melanerpes carolinus

Status: Common permanent resident

Size: 9 inches long

Food: Nuts, fruits, tree sap, and insects

Habitat: Open woodlands with snags and hollow trees; nesting in cavities excavated in snags; also uses poles and birdhouses

Life cycle: Two to six eggs incubated for 12 days; young fledge in 24 to 27 days

Call and drum: Call is a loud *chif-chif* or *churr* in a series or single notes; drum in bursts as long as one second



Northern Flicker

Colaptes auratus

Status: Common permanent resident

Size: 12½ inches long

Food: Ants; occasionally seeds, nuts, and grain

Habitat: Forests or open areas with scattered trees, nesting in cavities excavated in snags, poles, posts, buildings, banks, and haystacks

Life cycle: Five to eight eggs incubated for 11 to 14 days; young fledge in 25 to 28 days

Call and drum: Call is a long, loud, rapid *wicka-wicka-wicka-wicka* to *wik-a*, *wik-a*; drums softly in regular bursts

For more information about Missouri woodpeckers, visit MDC's online *Field Guide* at short.mdc.mo.gov/4aY.

Beyond the Traditional Mount

SKULL AND EUROPEAN MOUNTS
OFFER ALTERNATIVE WAYS TO
PRESERVE MEMORABLE HUNTS

by **Ginger Miller, T.J. Peacher, and Tom Foster**
photographs by **David Stonner**

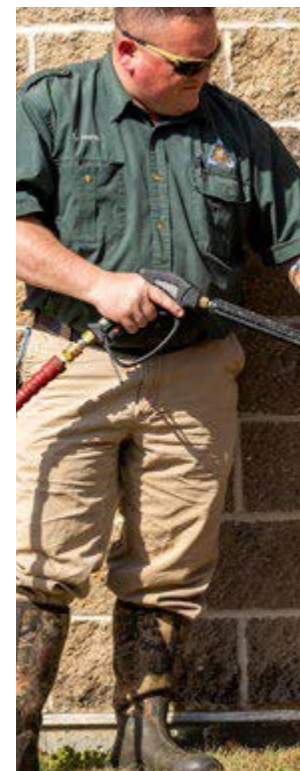
For many deer hunters, the evidence of their successful harvest can be found on a wall. Perhaps it's in a place of honor over a fireplace mantel, overlooking family game night from a wall in the living room, or listening in on laughs and stories in the family cabin. Wherever it is hung, the traditional shoulder-mounted trophy reminds both the hunter and visitors of time in the outdoors and the joy of hunting.

But shoulder-mounted deer trophies can be both expensive and cumbersome, which is why many hunters instead choose a simpler approach: skull or European mounts.

There are many fun ways to display your trophy beyond the traditional mount. Skulls can be hung directly on the wall or attached to a plaque. Consider how much space it will take up, if it will be wall mounted or sit on a shelf, and if you intend to paint or add designs to it. Skull mounts are more compact than shoulder mounts, so they work well in smaller areas.







Making a European Mount

Separate the head from the body as close to the skull as possible without cutting into the skull. A reciprocating saw is the simplest way to accomplish this because it can cut straight through the bones and tendons of the neck. Alternatively, a sharp knife can be used to carefully cut through tendons and connective tissues. Work the blade of the knife between the neck bones, cutting as you go, then the head can be twisted off the body. Wearing gloves is recommended.

Several methods can be used to remove everything that is not bone, including burying the skull, hanging the skull outside, using dermestid beetles, or boiling and/or power washing. Decide how quickly you would like to display your mount and how much you would like to spend. For example, beetles are often used in commercial preparations, but they require care, constant feeding, and containment; they are impractical for home use. Dermestid beetles do not weaken the skull, so they are favored when working with very delicate skulls.

BURYING THE SKULL

If you can wait several months and want to exert minimal effort, the head can be buried in the ground with the antlers sticking out. Cover the antlers with a tote or other container large enough to accommodate them. Use rocks on top to weigh the container down and drill small holes in the tote to allow flies and insects to enter while keeping neighborhood dogs and other larger scavengers out. After several months, carefully dig up the skull and wash it off. You will be left with a rustic, earth-brown skull. Any remaining fur can be scraped away. If you are feeling impatient, you can check the skull every two or three months and rebury if necessary.

HANGING THE SKULL

Another “set-it-and-forget-it” method is to place the head outside, on top of a post or in a tree. Over time, nature will

clean almost all the material from the skull. Remaining tissue can be removed with a pocketknife. Be aware that small rodents may chew on and damage antlers and exposure to sunlight will bleach the color out of the antlers.

BOILING THE SKULL

For a speedy result that can be done at home, skulls can be boiled in water and/or power washed. This method will require some dedicated equipment, such as a large metal pot from the thrift store or old turkey fryer. The pot must be big enough to submerge the skull. Hot water loosens materials that can then be sprayed off with a power washer or scraped off with a brush or knife.

First, remove all the skin from the deer head. Place the head in a large pot with everything except the antlers submerged and bring the water to a light boil. Take care to keep the antlers out of the water or the water will lighten their color. Check your progress after 30 minutes. Remove the skull from the water and take off loosened tissue. A power washer is helpful for taking off loosened soft tissue, but keep in mind that it will spray meat and tissue far and wide. To power wash a buck mount, hook antlers through a pallet. For smaller mammal and bird skulls, use a brush and reduce boiling time to avoid damage.

Insert a stick or small brush in the hole in the back of the skull to remove brain matter. You will use the same technique to remove the eyes. Take care to not damage the skull. If tissue remains, return the head to the boiling water to loosen more tissue as needed. Check the skull after 15 minutes to see how



much tissue can be easily removed. Avoid overboiling as it will weaken the structure of the skull, especially the delicate nasal bones. Repeat this process until the skull is free of soft tissue.

YOUR CANVAS

Once all tissue is cleared off the bones, let the skull dry and examine its color. Determine what color you would like your mount to be. If there are dark areas, you can spot treat them to make them lighter using a paper towel with household strength hydrogen peroxide, such as one might use to treat a scratch or scrape. Diluted bleach can be used, but it will make your skull brittle.

Alternatively, a matte white spray paint can be used to provide a uniform color to the skull. Carefully and tightly tape off antlers to protect them from overspray. Once sprayed and dried, you can touch up with a paint brush. Skulls can also be a canvas to paint nature scenes. Your finished mount can be placed on a shelf or attached to a plaque or other board to hang on the wall.

Painting the skull can provide a unique look. Spray cans, paint brushes, cans or tubes of paint can be used, followed by sealing the mount with a clear shiny or matte coat. Hydro dipping (transferring an image, color, or design onto an item by dipping it into paint-coated water) provides limitless options. Adding lights can provide a warm, illuminating glow. These same techniques can be used for other animal skulls, but adjust the time based on size and thickness of the skull. Check often to avoid regrets.



Making a Skull Plate Mount

If a smaller wall mount is desired, you can hold the head with the antlers up or secure the head in a vise and cut straight down with a reciprocating saw, then cut off the bottom to make a roughly rectangular or triangular skull plate. Scrape and scrub away all hide and flesh, then dry and attach to a wooden board with screws. You can use real or faux leather to cover up the skull plate. Trim the leather in an oval with slits and small circles to slide around the base of each antler. Position leather around the skull plate, then attach it to the board with decorative tacks gently hammered into the wood evenly around your rack. Attach a hanger to the back of the wood and pick a spot on the wall to display your achievement.

There are many ways you can prepare skull mounts. Find the ways that give you a product that is visually appealing. As with learning any new skill, be patient and practice when trying new techniques. Keep experimenting and learning ways to use more of your harvest. ▲

Ginger Miller, Ph.D., T.J. Peacher, and Tom Foster work for MDC. Miller is a conservation educator; Peacher is an education district supervisor for the Kansas City and Northwest regions; and Foster is a wildlife biologist.



A blizzard OF geese

THE STORY BEHIND THE SPECTACULAR
NUMBERS OF SNOW GEESE

by Dianne Van Dien



During winter migration, snow geese gather at Loess Bluffs National Wildlife Refuge in Mound City, Missouri.

PHOTOGRAPH BY NOPPADOL PAOTHONG



Every fall, millions of snow geese leave their Arctic nesting grounds and make their way south, many heading through the Midwest and stopping in Missouri. Tens of thousands gather in wetlands across the state from Loess Bluffs National Wildlife Refuge (NWR) in the northwest to Duck Creek Conservation Area (CA) in the southeast.

Whether you're watching 40,000 or 200,000, the sight of so many geese is stunning. The sound of their voices permeates the air as the flocks gather and maneuver.

If you arrive at a wetland in late morning, snow geese will be returning from feeding in nearby fields. A floating mass of white birds may already be forming in an open pool. Now and then hundreds of geese will rise up at once and get louder as an eagle passes overhead. At the same time, more geese will be flying in to join those on the open water. Calling to each other, they'll suddenly descend, twisting their bodies back and forth, sometimes turning completely upside down, to slow their speed before they splash onto the water's surface. Adjust your binoculars to look higher and farther, and you will see strands of geese at different altitudes stretching across the sky. Eventually the sky will empty, and the entire

wetland pool will be covered in geese, packed shoulder to shoulder.

Estimating the number of geese — not just on individual wetlands, but of the snow goose population as a whole — is something biologists have been doing for decades, and the data they've collected show that there are far more snow geese today than there were in the middle of the 20th century. For some species, this increase would have been celebrated, but for snow geese, that is not the case.

"On one side of the coin, it is amazing to see that many birds all in one location," says Frank Nelson, MDC wetlands systems manager. "On the other side of the coin, there's been a lot of concern and effort put into trying to keep these populations from running away."

Monitoring Goose Populations

Wildlife agencies in Canada and the U.S. work together to monitor and manage Arctic-nesting geese whose annual life cycles span both countries. Snow geese are managed as separate populations based on breeding area and migration route. While all have seen growth, the midcontinent population (the ones we see here in the middle of the U.S.) has had the biggest increase. In the 1970s, estimates for midcontinent snow

The number of snow geese on wetlands during migration can range from the tens of thousands to more than a hundred thousand. Although they will eat the roots of marsh plants, snow geese migrating through agricultural areas often feed in nearby fields on waste grain left after the harvest.



Snow geese have a wingspan of about 4 ½ feet. The pigment in the black primary feathers of their wings makes these feathers stronger and more resistant to wear than white feathers would be.

geese averaged about 2 million, but in the 2000s, yearly estimates were ranging from 11 to 18 million.

Snow geese are not the only Arctic-nesting geese that are monitored and migrate through our state. We also see flocks of Canada geese and greater white-fronted geese. And mixed in with the migrating snow geese are Ross's geese. These geese look very much like snow geese but are smaller (about the size of a mallard). They nest in the same areas as snow geese in the central Arctic, and while most Ross's geese take a more westerly

route, some migrate to the Midwest. Collectively, snow geese and Ross's geese are referred to as "light geese."

Although the Ross's goose population is far smaller than that of snow geese, it has also seen phenomenal growth from an average of about 160,000 in the early 1990s to about 2.5 million in 2018.

Population estimates, past and current, can be found in an annual waterfowl status report provided by the U.S. Fish and Wildlife Service (USFWS) at short.mdc.mo.gov/4RV.

What's at Stake?

Geese are herbivores, or plant eaters. They are considered grazers, but "snow geese have serrated, strong bills and tongues," explains Andy Forbes, USFWS biologist, "which enable them to 'grub' more than other species of goose and take advantage of the roots of plants versus just grazing like other species of goose."

Sprouts and plant roots provide snow geese with high-quality nutrition, but because they pull up the entire plant instead of just grazing, it takes longer for the habitat to replace the plants that the snow geese eat. Biologists are concerned about how the increase in snow geese will affect the tundra and salt marsh habitats where the geese breed. Over time, a larger breeding population can reduce the amount of ground cover and change the soil quality, ultimately damaging the Arctic habitat and causing problems for other species, such as shorebirds that rely on the vegetation for nesting cover.

Juvenile snow geese are grayish with somewhat darker gray heads (white morph) or they may be brown (dark morph). They stay with their parents during their first migration south and back to the northern breeding grounds in spring. Their feathers gradually change to adult plumage, so you may see individuals in various stages of plumage transition.



MISSOURI'S Arctic-Nesting Geese

White morph



SNOW GOOSE

Anser caerulescens

Length: 28 inches
(tip of bill to tip of tail)

Where: Statewide

The snow goose has two color forms: white morph and dark morph. Dark morph snow geese are often called "blue geese" and were thought to be a separate species until 1983.



To tell a snow goose from a Ross's goose, look at the head and bill. A snow goose has a proportionately larger bill with a distinctive "grin patch" or black "lipstick" mark. A Ross's goose has a more rounded head, a smaller bill, and little to no grin patch.



Dark morph

ROSS'S GOOSE

Anser rossii

Length: 23 inches
(tip of bill to tip of tail)

Where: Statewide

In Missouri, most large flocks of snow geese also include a few Ross's geese. Like snow geese, Ross's geese also have a white and dark form.



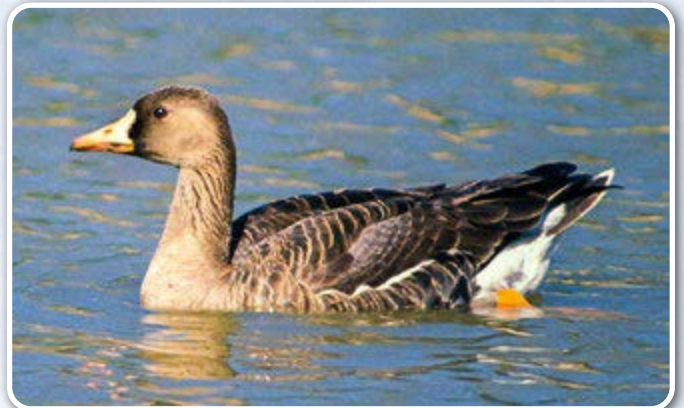
CANADA GOOSE

Branta canadensis

Length: 24-48 inches (tip of bill to tip of tail)

Where: Common statewide on ponds, lakes, and marshes

Although some Canada geese migrate to and breed in the Arctic, many remain and breed in the U.S., including here in Missouri.



GREATER WHITE-FRONTED GOOSE

Anser albifrons

Length: 28 inches (tip of bill to tip of tail)

Where: Uncommon migrant statewide. More common in the western half of state

Adult greater white-fronted geese have white feathering around the base of their bill and black streaks or splotches on their bellies. Their calls are described as a high-pitched yelping, laughing sound.

What Caused the Population Growth?

During migration, birds burn a lot of energy. Unlike hawks and vultures, geese don't glide as they travel but flap nearly constantly. Weighing an average of 5 pounds, snow geese need a lot of food if they're going to make it from the Arctic to the wintering grounds and back. Surviving migration can be a major challenge.

"Geese and other waterfowl have comparatively large, powerful pectoral muscles made up of large proportions of aerobic (dark) muscle fibers that allow them to be strong fliers with great endurance," Forbes says. "Their behavior on staging areas involves intensive feeding, which enables them to build fat stores, which power longer distance flights."

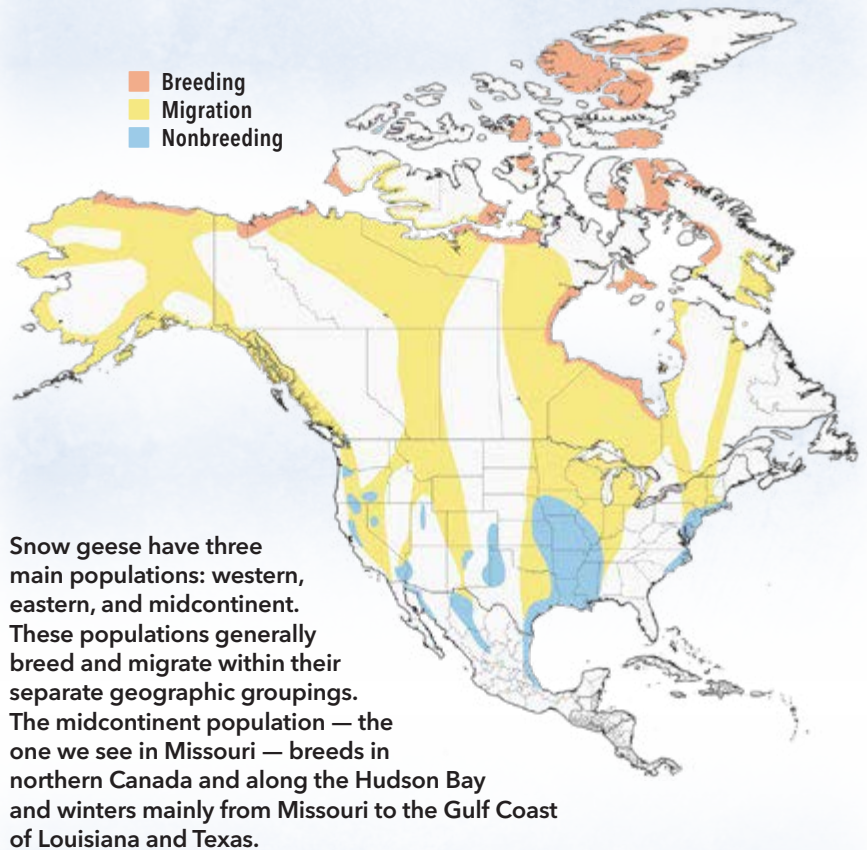
As they travel, snow geese stop at wetlands on refuges and conservation areas, often leaving during the day to forage on waste grain in nearby agricultural fields. Before farming covered the Midwest, these fields were not there. Scientists believe that feeding on agricultural leftovers in Missouri and other states is the main reason why the snow goose population has seen so much growth. Extra winter food equals better survival.

Darrin Welchert, wildlife biologist at Loess Bluffs NWR, explains it this way: "It's been one of those stories where the geese have figured out so well how to survive with feeding on waste grain as they migrate south, as the land's been converted over the last 100 plus years from prairie to agriculture ... Then [the population] boomed and they started eating themselves out of house and home [on the breeding grounds]."

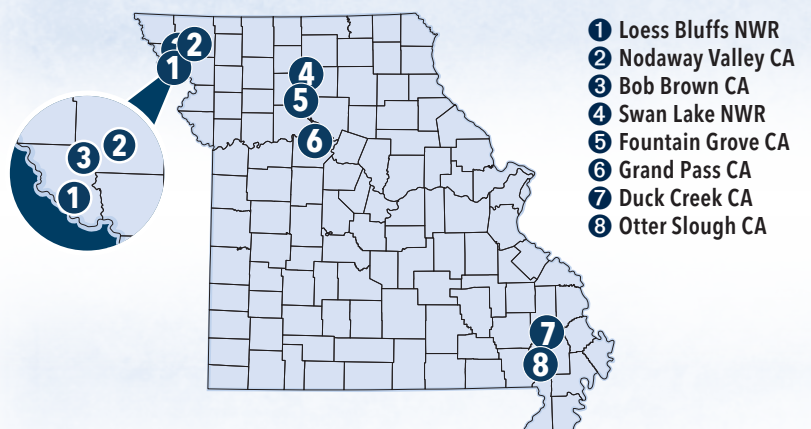
Light Goose Conservation Order

In 1999, to help bring the snow goose population back to sustainable numbers, the U.S. established the Light Goose Conservation Order (LGCO), allowing snow and Ross's geese to be harvested outside of the regular hunting season. Canada implemented a similar measure. The goal was to decrease the population by increasing the number of geese harvested each year. The dates and harvest limits for the conservation order are determined by each state to fit with local conditions. In Missouri, the LGCO begins after the other waterfowl seasons have ended and runs from February 7 to April 30. During this time, there is no daily bag limit or possession limit for light geese.

SNOW GOOSE Range



Where to See SNOW GEESE IN MISSOURI





More than 1 million snow geese have been counted in a single day at Loess Bluffs National Wildlife Refuge during spring migration.

The LGCO has been in place for more than two decades. Although the harvest rate increased after the conservation order was issued, it wasn't enough to keep up with population growth. Snow goose numbers continued to rise, with the adult midcontinent population averaging around 17.5 million in the late 2000s and remaining relatively stable for nearly a decade. But in 2017, the numbers began to drop. In 2022 the midcontinent population was estimated at a little less than 5 million, similar to what the population had been in the early 1990s.

While snow goose numbers have declined, scientists do not believe the LGCO is the reason. They note that the adult survival rate still has not changed much, so the population decline cannot be from the number of geese that are being harvested. Instead, research indicates that fewer goslings are reaching adulthood, likely because the dense number of geese on the breeding grounds is taking its toll — there is less food for the offspring.

Some recent journal articles suggest that climate change may also be playing a role. With a warming Arctic, the vegetation emerges earlier

in the season and may no longer be at the optimal stage for the growing goslings. A warmer climate can also cause cooler, wetter springs, which can delay nesting and reduce nesting success.

Adult survival is still high and harvest rates are not high enough to reduce the number of adults, so the LGCO will not change. Biologists will keep monitoring the situation and, if needed, update hunting regulations in the future.

For full details about goose population monitoring, research, and management history, visit the Arctic Goose Joint Venture website at agjv.ca.

Are We Seeing Fewer Snow Geese in the Midwest?

"This is complicated," says Forbes. "The overall population has declined, but there are possibly more birds [snow geese] now in the Midwest during the winter than historically, as they are wintering proportionally more northward."

Not all geese are going to Texas and Louisiana for the winter as they did in the past. Winter food (waste grain) is now available in states like Missouri and Arkansas, so the geese don't need to fly all the way to the Gulf Coast to survive the winter.



FOR snow geese, GATHERING IN LARGE FLOCKS IS A NATURAL BEHAVIOR — A SURVIVAL STRATEGY.



How Do Snow Geese Affect Wetlands in Missouri?

Wetland managers don't need to do anything special to accommodate the visiting masses of snow geese, especially since the geese tend to feed in surrounding agricultural fields. Managing for other waterfowl and shorebirds gives the geese what they need. Yet their presence can have an impact, varying by year and location.

At Loess Bluffs NWR, Welchert says the snow geese are "primarily using the refuge as a roost and loafing area." The sheer number of geese, which can reach more than 1 million in the spring, can crowd ducks out of a pool, he says, but there doesn't seem to be any direct competition for food.

In other places, such as Grand Pass CA, "High numbers of snow geese, especially in the fall, compete with other waterfowl for high energy foods and can quickly use up those resources," says MDC Wildlife Biologist Robert Henry. "Likewise, large numbers of snow geese can knock down vegetation, making it difficult for hunters to hide during waterfowl season."

MDC Wildlife Biologist John Marshall explains that snow geese sometimes cause

nutrient loading. "The snow geese like to loaf on Cypress Lake, a 90-acre lake on Otter Slough, and the waste (bird poop) that builds up through the winter leads to summer algal blooms and fish die-offs when we have several days of overcast weather," he says. "So, we often try to flush the lake with fresh well water in late summer to prevent fish kills."

But snow geese also provide additional hunting opportunities and amazing wildlife viewing as well as food for predators. Coyotes "take off wounded or sick birds that are on the edge of the wetlands," Welchert says. "And I've seen red-tailed hawks and northern harriers also take them ... Eagles, when they're here, feed on a variety of things and a lot of the time they're feeding on snow geese."

For snow geese, gathering in large flocks is a natural behavior — a survival strategy. Forbes explains that they are "overwhelming predators with their superabundance" and their "white coloration likely helps them blend in with patches of snow or ice, and possibly makes individual birds harder to target by predators when [the geese] are in large flocks."

On winter wetlands, when an eagle flies overhead and the geese rise up in a moving sea of white, the chaos and commotion you see has a purpose. Those ten thousand goose voices you hear and the streams of geese you see crossing the sky are part of a story that spans two countries, connecting very different habitats. It's a story that biologists are watching closely. ▲

Dianne Van Dien is an editor for MDC and writes Nature Lab for the Missouri Conservationist. Watching 200,000 snow geese at Loess Bluffs NWR is one of her favorite outdoor experiences.

Get Outside

in NOVEMBER



→ Ways to connect with nature



Battling Bush Honeysuckle

Once most of the fall color is gone, you may see some green remaining in the forest understory. That is likely invasive bush honeysuckle, which will remain green well into December. Because bush honeysuckle stays green after most plants have gone dormant, and in spring greens up before other species leaf out, and then grows aggressively, bush honeysuckle outcompetes native wildflowers and other plants and prevents regeneration of forests. Help to control this problematic shrub. For ways to help in the fight, visit short.mdc.mo.gov/ZCi.

It's Hunting Season

Mushroom hunting season, that is! Take an autumn hike and keep an eye out for mushrooms, which decorate autumn woodlands the way wildflowers do in the spring. Here are some choice edibles you may find:



Oyster mushrooms fruit year-round, growing in overlapping clusters on stumps, logs, and trunks of deciduous trees.



Hen of the woods are large mushrooms that grow on the ground at the base of oak trees. They are often found on the same tree year after year, so if you find some, remember your spot for next year.



Sulphur



Pale

Sulfur-colored chicken of the woods and **pale chicken of the woods** mushrooms develop through November in overlapping clusters on dead or dying deciduous trees, stumps, buried roots, or living trees. They are orange to yellow, fleshy, fan-shaped structures.

Natural Events to See This Month

Here's what's going on in the natural world.



Eastern witch-hazel flowers.



Most species of crayfish breed.



Eagles soar over lakes, rivers, and marshes.

VIRTUAL

CONSERVATION FAMILIES: Where Can I Learn More About Nature?

Wednesday • Nov. 13 • 12-12:30 p.m.

Online only

Registration required by Nov. 12. To register, call 888-283-0364 or visit short.mdc.mo.gov/4a5.

All ages

There are many MDC nature and education centers throughout the state. We will highlight each center during this program.

Give Your Rake a Break

Before you grab that rake for another back-breaking day of yard work, think about this — allowing fallen leaves to remain on the ground is friendly to wildlife. Fallen leaves provide refuge and food for backyard wildlife, including insects that are essential food for nesting songbirds in spring and butterflies and other pollinators. In addition, those leaves nourish the soil around a tree, creating a mulch layer that helps rain and snow soak into the ground. So, kick back and enjoy your day knowing you have helped nature.



CENTRAL REGION

NATURE ART: Root Head Decoys by Artist Jim Barksdale

Friday, Nov. 1-Saturday, Nov. 30 • 8 a.m.-5 p.m.

Runge Conservation Nature Center,
330 Commerce Dr., Jefferson City, MO 65109

Registration is not required. For more information, call 573-526-5544 or visit short.mdc.mo.gov/4aw.

All ages

Root head decoys were early duck decoys made from driftwood or dead tree logs for the body, and tree roots and limbs for the head. Jim Barksdale's carvings demonstrate his efforts to simulate these historic and creative works of art.



HUNTERS, HELP US!

NOVEMBER 16-17

MANDATORY SAMPLING of DEER OPENING FIREARMS WEEKEND in SELECT CWD MANAGEMENT ZONE COUNTIES

Get information on chronic wasting
disease and find sampling locations at
MDC.MO.GOV/CWD

Places to Go

SOUTHWEST REGION

Compton Hollow Conservation Area

Deer hunting destination offering off-season options

by Larry Archer

✳ **With its location in southwest Missouri and its heavily wooded landscape, Compton Hollow CA is a popular destination for deer hunters in November.**

Located on more than 830 acres in Webster County, Compton Hollow CA is 90 percent forested with watering holes and wildlife food plots that make it attractive to both deer and those who hunt them, according to Resource Management Crew Leader Dustin McCleary.

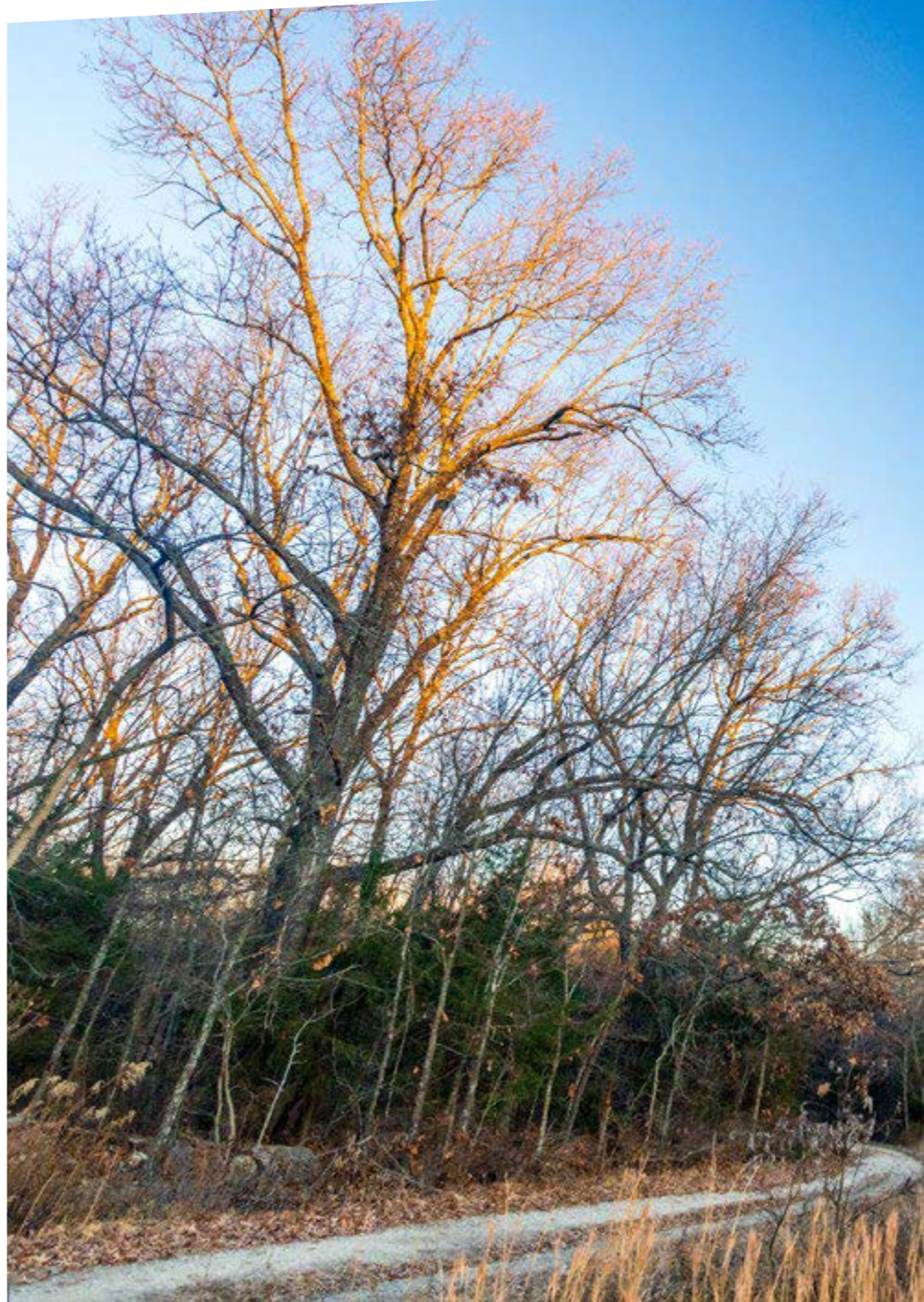
"There's quite a bit of deer hunters out there," McCleary said. "It gets hunted quite a bit since it's close to Springfield."

Outside of firearms deer season — and the shooting hours of spring turkey season — the area's nearly 7 miles of multiuse trails are open to bicycle and horseback riding. These trails are better described as scenic rather than challenging, McCleary said.

"Most of these are not very challenging," he said. "It's pretty flat for the most part."

Beyond hunting, hiking, and riding, Compton Hollow CA also offers archers the opportunity to test their skills on its six-station field course.

"It's an unstaffed archery course that has six stations on it," he said. "It's pretty simple, you know, it's just a path through the woods and there's a station and a target."



Multiuse trails make the 831-acre Compton Hollow CA accessible to bicyclists, horseback riders, and hikers. Trail usage is limited during firearms deer hunting season and shooting hours of the spring turkey hunting season. (Inset) While 90 percent of the area is forested, old fields and wildlife food plots dot the area.

NORRADI PHOTOGRAPH



COMPTON HOLLOW CONSERVATION AREA

consists of 831.3 acres in Webster County.
From Marshfield, take I-44 west to exit 96, then
Route B south 5 miles, then Compton Hollow
Road east about 1 mile.

37.2267, -92.9949

short.mdc.mo.gov/4Ro 417-895-6880

WHAT TO DO WHEN YOU VISIT



Archery Archery field course with six individual stations. Regulations sign at the start of the course instructs users in proper procedures.



Birdwatching The eBird list of birds recorded at Compton Hollow CA is available at short.mdc.mo.gov/4bP.



Camping Open camping.



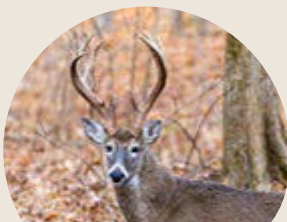
Hunting Deer and turkey
Regulations are subject to annual changes.
Refer to short.mdc.mo.gov/Zjw for regulations.

Also **bear, rabbit, and squirrel**



Trails Includes 6.9 miles of multiuse trails allowing hiking, biking, and horseback riding. Closed to bicycles and horses during firearms deer and during shooting hours of the spring turkey hunting season.

WHAT TO LOOK FOR WHEN YOU VISIT



White-tailed deer



Raccoon



Cedar waxwing



Red-tailed hawk



Voles

Microtus

Status
Common

Size
Total length: about 4½–7 inches; weight: to about 2 ounces

Distribution
Statewide



Voles are small, stocky mouselike rodents. There are three species in Missouri, all quite similar, including the prairie, woodland, and meadow vole. They build runway systems above and below ground and build nests out of woven grasses and other materials. They live in moist, low areas with thick grasses, and in drier grasslands near streams, lakes, or swamps.



FOODS

Voles eat stems, leaves, roots, tubers, flowers, seeds, and fruits of many plants. Insects and other small animals may also be eaten. When food is scarce, voles eat the inner bark of trees, shrubs, and vines. Food is stored in chambers near nests and often aboveground in hollow stumps and other hiding places. A cache may hold 2 gallons of food.



LIFE CYCLE

Voles breed year-round, but peak season is spring and fall. With gestation lasting about 3 weeks, several litters can occur per year. On average, a litter consists of two to five young that are weaned within two to three weeks.



HUMAN CONNECTIONS

Voles can be beneficial — working the soil and mixing in their stores of food and waste products, which helps plants grow. However, when voles are numerous, they can be pests. They can damage trees, lawns, and garden plants.

Outdoor Calendar

❖ MISSOURI DEPARTMENT OF CONSERVATION ❖



Free MO Hunting and MO Fishing Apps

MO Hunting makes it easy to view permits, electronically notch them, and Telecheck your harvest. MO Fishing lets you view permits, find great places to fish, and ID your catch. Get both in Android or iPhone platforms at short.mdc.mo.gov/Zi2.

FISHING

Black Bass

Impounded waters and non-Ozark streams:
Open all year

Most streams south of the Missouri River:

- ▶ Catch-and-Keep:
May 25, 2024–Feb. 28, 2025

Nongame Fish Giggling

Streams and impounded waters,
sunrise to midnight:
Sept. 15, 2024–Feb. 15, 2025

Paddlefish

On the Mississippi River:
Sept. 15–Dec. 15, 2024

Trout Parks

During the catch-and-release season,
state trout parks (except Maramec Spring
Park) are open only Friday–Monday.

Catch-and-Release:

Nov. 8, 2024–Feb. 10, 2025

TRAPPING

Badger, Gray Fox, Red Fox

Nov. 15, 2024–Jan. 31, 2025

Beaver, Nutria

Nov. 15, 2024–March 31, 2025

Bobcat, Coyote, Mink, Muskrat, Opossum, Raccoon, River Otter, Striped Skunk

Nov. 15, 2024–Feb. 28, 2025

Rabbits

Nov. 15, 2024–Jan. 31, 2025

For complete information about seasons, limits, methods, and restrictions, consult the *Wildlife Code of Missouri* at short.mdc.mo.gov/Zib. Current hunting, trapping, and fishing regulation booklets are available from local permit vendors or online at short.mdc.mo.gov/ZZf.

HUNTING

Badger, Gray Fox, Red Fox

Nov. 15, 2024–Jan. 31, 2025

Bobcat, Opossum, Raccoon, Striped Skunk

Nov. 15, 2024–Feb. 28, 2025

Coyote

Restrictions apply during April, spring turkey
season, and firearms deer season.

Open all year

Crows

Nov. 1, 2024–March 3, 2025

Deer

Archery:

Sept. 15–Nov. 15, 2024

Nov. 27, 2024–Jan. 15, 2025

Firearms:

- ▶ Early Youth Portion (ages 6–15):
Nov. 2–3, 2024

- ▶ November Portion:
Nov. 16–26, 2024

- ▶ CWD Portion (open areas only):
Nov. 27–Dec. 1, 2024

- ▶ Late Youth Portion (ages 6–15):
Nov. 29–Dec. 1, 2024

- ▶ Late Antlerless Portion (open areas only):
Dec. 7–15, 2024

- ▶ Alternative Methods Portion:
Dec. 28, 2024–Jan. 7, 2025

Doves

Sept. 1–Nov. 29, 2024

Elk

Only hunters selected through
a random drawing may
participate in this hunting season.

Firearms:

Dec. 14–22, 2024

Groundhog (Woodchuck)

May 6–Dec. 15, 2024

Pheasant

Nov. 1, 2024–Jan. 15, 2025

Quail

Nov. 1, 2024–Jan. 15, 2025

Rabbits

Oct. 1, 2024–Feb. 15, 2025

Sora, Virginia Rail

Sept. 1–Nov. 9, 2024

Squirrels

May 25, 2024–Feb. 15, 2025

Turkey

Fall Archery Portions:

Sept. 15–Nov. 15, 2024

Nov. 27, 2024–Jan. 15, 2025

Waterfowl

See the Migratory Bird and Waterfowl
Hunting Digest or visit short.mdc.mo.gov/ZZx
for more information.

Wilson's (Common) Snipe

Sept. 1–Dec. 16, 2024

Woodcock

Oct. 18–Dec. 1, 2024

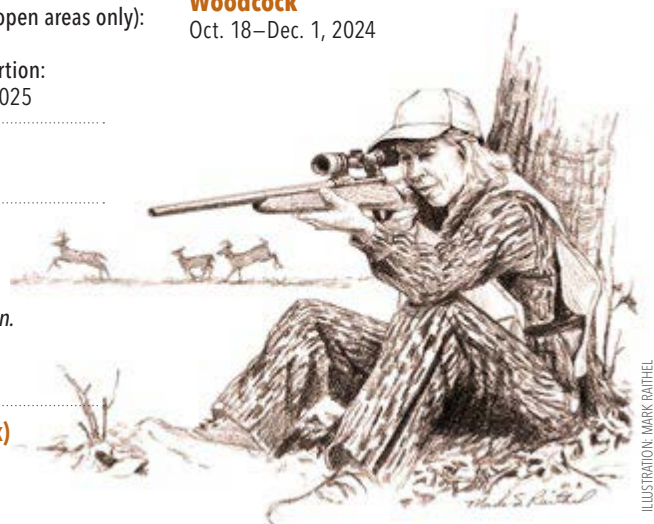


ILLUSTRATION: MARK RATHIEL



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North American river otters are known to be playful, taking advantage of the natural wonders around them. Take a page from their playful playbook — get out and explore Missouri's wild places. With more than 1,000 conservation areas statewide, there's one closer than you think. What will you discover?

📷 by **Noppadol Paothong**

Free to Missouri households

To subscribe, cancel your subscription, or update your address, visit mdc.mo.gov/conmag.